

Claims

- [1] 1. A liquid crystal display comprising:
a plurality of switching elements arranged in a matrix;
a plurality of gate lines connected to the switching elements and transmitting gate signals for turning on or off the switching elements, and
a plurality of data lines connected to the switching elements and transmitting data voltages,
wherein at least one of the switching elements in a row or in a column is connected to a different-sided gate line or to a different-sided data line.
- [2] 2. The liquid crystal display of claim 1, wherein a pair of switching elements adjacent above and below are connected to a gate line therebetween or opposite-sided gate lines.
- [3] 3. The liquid crystal display of claim 1, wherein a pair of switching elements adjacent above and below comprise a first pair of switching elements connected to a gate line therebetween and a second pair of switching elements connected to opposite-sided gate lines.
- [4] 4. The liquid crystal display of claim 3, wherein the first and the second pair of switching elements are adjacent to each other.
- [5] 5. The liquid crystal display of claim 4, wherein the pair of switching elements further comprise a third pair of switching elements connected to a gate line located in the same side as and a data line located in an opposite side to the first pair of switching elements and a four pair of switching elements connected to a gate line located in the same side as and a data line located in an opposite side to the second pair of switching elements, and the third and the fourth pair of switching elements are adjacent to each other.
- [6] 6. The liquid crystal display of claim 5, wherein a first switching group comprising the first and the second pair of switching elements and a second switching group comprising the third and the fourth pair of switching elements are arranged regularly.
- [7] 7. The liquid crystal display of claim 6, wherein the first and the second switching element groups are arranged regularly in a row direction.
- [8] 8. The liquid crystal display of claim 7, wherein the first switching element group is arranged repeatedly in a column direction.
- [9] 9. The liquid crystal display of any one of claims 6 to 8, wherein the switching

- elements are parts of subpixels representing colors, and the subpixels comprising the switching elements belonging to the first and the second switching groups represent three primary colors and a white color.
- [10] 10. The liquid crystal display of any one of claims 2 to 8, wherein the switching elements are parts of subpixels representing colors, and the subpixels in the same column represent the same color.
- [11] 11. The liquid crystal display of claim 10, wherein the subpixels represent three primary colors.
- [12] 12. The liquid crystal display of claim 10, wherein the subpixels represent three primary colors and a white color.
- [13] 13. The liquid crystal display of claim 1, further comprising a data driver applying the data voltage via the data line and performing an $N \times 1$ (N is a natural number) dot inversion or a column inversion.
- [14] 14. The liquid crystal display of claim 1, wherein the switching elements are parts of subpixels representing three primary colors and a white color, and the subpixels in the same column represent the same color.
- [15] 15. The liquid crystal display of claim 14, wherein four adjacent subpixels respectively representing three primary colors and a white color form a pixel; the switching elements belonging to the subpixel are all connected to the same -sided data lines;
the switching elements belonging to the subpixels of two pixels adjacent in a row direction are connected to different -sided gate lines; and
the switching elements belonging to the subpixels of two pixels adjacent in a column direction are connected to the same -sided gate lines.
- [16] 16. The liquid crystal display of claim 15, further comprising a data driver applying the data voltages via the data lines and performing a 1×1 dot inversion.
- [17] 17. The liquid crystal display of claim 14, wherein four adjacent subpixels respectively displaying three primary colors and a white color form a pixel; the pixel comprises a first and a second pixels adjacent in a row direction; the switching elements belonging to the subpixels of the first pixel and the switching elements belonging to the subpixels of the second pixel are connected to opposite-sided data lines; and
the switching elements belonging to two subpixels of the subpixels of the first pixel are connected to opposite-sided gate lines.
- [18] 18. The liquid crystal display of claim 17, wherein the switching elements

belonging to the subpixels of the second pixel are all connected to the same gate line.

- [19] 19. The liquid crystal display of claim 18, wherein the switching elements belonging to the subpixels of the respective pixels are connected to the same - sided data lines.
- [20] 20. The liquid crystal display of any one of claims 17 to 19, further comprising a data driver applying the data voltages via the data lines and performing a column inversion.